59.   The method of claim 58, further comprising the steps of:

transmitting said alignment time from said telemetry device to said collector in a transmission;

determining a receipt time representing the time said collector receives said transmission; and

subtracting said alignment time from said receipt time to generate a time representing the measurement time of the most recent measurement in the transmission.

60.   The method of claim 52, wherein said parameter is selected from the group consisting of electrical power, fluid flow, voltage, current, temperature, pressure, and humidity.

61.   (Amended) A method of collecting data comprising the steps of:

receiving a series of successive measurements from a series of transmissions from a telemetry device;

storing and filtering the series of successive measurements by a pathway device connected to a LAN transceiver capable of receiving the series of transmissions;

transmitting the filtered data as through an internet connection to a remote center for generation of a metered output function at the remote center; and

displaying the transmitted data on at least one web page hosted by the pathway device.

62.   The method of Claim 61, wherein the remote center comprises a date processing center.

63.   The method of Claim 61, wherein the remote center comprises a customer site.

REMARKS

Claims 1-63 are pending in the present application. Of these claims, 1, 18, 28, 41, 47, 49, 51, and 52 are independent. Claims 1-5, 7-17, 41-46, 49-52 are rejected under 35 U.S.C. 102(e) as being anticipated by Jenney et al. (U.S. Patent No. 5,897,607). Claim 6 is rejected under 35

U.S.C. 103(a) as being unpatentable over Jenney et al. Claims 18-40, 47, 48, 53, 54, 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenney et al. and further in view of Schanker et al. (U.S. Patent No. 5,448,230). Claims 55-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenney et al., Schanker et al. and further in view of Johnson (U.S. Patent No. 5,553,094)

I.   Claim 1

Claim 1 calls for a data collection system comprising a plurality of telemetry devices and a plurality of collection devices, each collection device including a hub to receive transmissions as packets from the sensor, the transmissions containing both old measurements and new measurements.

Jenney discloses an automatic meter reading (AMR) system in which each AMR receives raw meter data in the form of pulses in proportion to the commodity consumed(Col. 4, lines 34-35 and 54-55).

Jenney fails to disclose receiving transmissions as packets, the transmissions containing both old measurements and new measurements. As explained on page 5 of Applicant's Specification, the packets transmitted in each transmission include redundant data transmitted in each of several previous transmissions. The purpose of including both old data along with the new data is to improve system reliability.

Neither Schanker nor Johnson makes up for the deficiencies of Jenney. Schanker and Johnson have a different focus from Jenney. Both Schanker and Johnson focus on how to transmit data from collection devices scattered across a wide geographic area to a central data management platform. Both disclose using intermediate concentrator devices to route between a collector device and a central platform (FIG. 1 of both Schanker and Johnson).

Neither Schanker nor Johnson focuses how to transmit data from the telemetry device to the collection device. Specifically, neither discloses a collection device that receives transmissions as packets, the transmissions containing both old measurements and new measurements. Instead, they disclose a collection device that receives primary consumption data and then forwards cumulative consumption data as packets (Schanker Col. 2, lines 41-48; Johnson Col. 4 lines 1-3).

Thus, neither Jenney, Schanker, nor Johnson, separately or combined, disclose all the limitations of claim 1. For at least this reason, claim 1 and its dependent claims are allowable.

II.   Claims 18, 28, 41, 47, 49, 51, 52 and 61

Claim 18 calls for receiving measurements from a telemetry device, storing and filtering the measurements, displaying the measurements on at least one web page, and transmitting the measurements.

Jenney transmits measurements, but Jenney fails to display measurements, either on a web page or otherwise. As explained on pages 21-22 of the applicant's specification, an advantage of displaying the measurements is so that a user can tell which measurements have been received by the collection device and which of the received measurements have been transmitted. Jenney fails to disclose a need or a technique for displaying measurements.
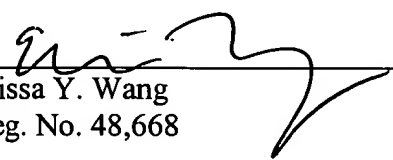
Schanker and Johnson also fail to display measurements. For at least this reason, claim 18 and its dependent claims are allowable. Claims 28, 41, 47, 49, 51, 52, and 61 and their dependent claims, contain similar limitations to claim 18 and are allowable at least for the reasons for claim 18.

Attached is a marked-up version of the changes being made by the current amendment.

Applicant submits that all claims are in condition for allowance and asks that all claims be allowed. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date:_____7-9-02_____

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Version with markings to show changes made

In the claims:

Claim 39 has been cancelled.

Claims 1, 18, 28, 41, 47, 49, 51, 52 and 61 have been amended as follows:

1.   (Amended) A data collection system comprising:

a)   a plurality of telemetry devices, each telemetry device including:

i)   a sensor configured to generate a series of successive measurements by measuring a parameter at a series of measurement times,

ii)   a memory configured to store a plurality of measurements from said series of successive measurements, and

iii)   a transmitter configured to transmit measurements stored in memory to a collection device at a series of transmission times, and

b)   a plurality of collection devices, there being fewer collection devices than telemetry devices, each collection device including:

i)   a hub to receive transmissions as packets from the sensor, the transmissions containing both old measurements and new measurements, and

iii)   a network device to forward at least a subset of a series of said

transmissions [as packets] over an internet connection to a data processing

center to generate an output function.

18.   (Amended) A method of collecting data comprising the steps of:

receiving a series of successive measurements from a series of transmissions from a telemetry device;

displaying the series of successive measurements on at least one web page;

storing and filtering the series of successive measurements;

and

transmitting the filtered data [as packets] through an internet connection to a processing center.

28.   (Amended) A network device connected to a receiving device configured to collect data generated by a plurality of sensors, comprising:

a micro-processor to process data generated by the plurality of sensors and collected by the receiving device, including time-stamping and filtering;

at least one storage device to store at least a subset of processed data; [and]

a transmitter to transmit data [as packets] through an internet connection to a data processing center; and

an HTTP server to host at least one web page that displays the collected data.

41.   (Amended) A network device configured to collect data generated by a plurality of sensors, comprising a computer program, residing on the device, the computer program comprising instructions for causing the device to:

interface with a LAN device, the LAN device receiving data from the plurality of sensors;

display data or at least one web page;

store and forward data; and

interface an internet connection to transmit data [as packets] to a remote center.

47.   (Amended) A data collection system, comprising:

a plurality of sensors residing in a meter, each of the plurality of sensors being configured to sample a parameter value at discrete measurement times and including a transmitter configured to transmit measured data; and

a collector having a receiver configured to receive data transmitted by the plurality of sensors, a processor configured to filter and store data received by the receiver from the plurality of sensors, [and] a transmitter configured to transmit the filtered data [as packets] to a monitoring station for processing by an internet connection; and an HTTP server configured to host at least one web page displaying the received data.

49.   (Amended) A data collection system, comprising:

a plurality of measurement sensor means each located near a consumer of electricity for measuring data relating to consumer usage of electricity and for transmitting the measured electricity usage data; and

a collector means having a receiver for receiving electricity usage data transmitted by the plurality of sensor means, a processor for computing electricity usage information from electricity usage data received by the receiver, [and] a transmitter for transmitting the electricity usage information [as packets] to a remote center through an internet connection; and an HTTP server for hosting at least one web page displaying the received data.

51.   (Amended) A network for collecting data generated by a plurality of sensors, comprising:

a)   a plurality of data generating devices including:

i)   a sensor to measure a parameter to generate measurements,

ii)   a memory configured to store said measurements, and

iii)   a transmitter to transmit said stored measurements to an intermediate device at a plurality of transmission times; and

b)   a plurality of intermediate devices, there being fewer intermediate devices than data generating devices, said intermediate devices including:

i)   a receiver to receive transmissions from a subset of said plurality of data generating devices;

ii)   a processor to filter said measurements from said transmissions and analyze said measurements to generate a metered function of the parameter, [and]

iii)   a transmission module to transmit the metered function [as packets] over an internet connection; and

iv)   an HTTP server to host at least one web page displaying said measurements; and

d)   a data station remote from the plurality of intermediate devices to receive transmitted meter functions from said plurality of intermediate devices.

52.   (Amended) A method of collecting data comprising the steps of:

a) generating measurements by measuring a parameter using a telemetry device;

b) storing a plurality of said measurements in a memory;

c) transmitting said stored measurements to a collection device;

d) displaying said measurements on at least one web page hosted by the collection device;

[d]e) processing said transmitted measurements at the collection device; and

[e]f) transmitting, under a plurality of triggering conditions, said processed measurements as packets to a monitoring station by an internet connection.

61. (Amended) A method of collecting data comprising the steps of:

receiving a series of successive measurements from a series of transmissions from a telemetry device;

storing and filtering the series of successive measurements by a pathway device connected to a LAN transceiver capable of receiving the series of transmissions; [and]

transmitting the filtered data [as packets] through an internet connection to a remote center for generation of a metered output function at the remote center;[.] and

displaying the transmitted data on at least one web page hosted by the pathway device.